

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/089125 A3

(51) International Patent Classification⁷: **B01J 23/84**,
37/10, C01D 307/32

804-5 Sinjeong 4-dong, Nam-gu, Ulsan-city 680-014
(KR).

(21) International Application Number: PCT/KR03/00800

(74) Agent: **YOU ME PATENT & LAW FIRM**; Teheran
Bldg., 825-33, Yoksam-dong, Kangnam-ku, Seoul 135-080
(KR).

(22) International Filing Date: 18 April 2003 (18.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2002-0022029 22 April 2002 (22.04.2002) KR

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(71) Applicants (*for all designated States except US*):
AEKYUNG PETROCHEMICAL CO., LTD. [KR/KR];
106-3 Guro 5-dong, Guro-gu, Seoul 152-842 (KR).
**KOREA RESEARCH INSTITUTE OF CHEMICAL
TECHNOLOGY** [KR/KR]; 100 Jang-dong, Yuseong-gu,
Daejeon-city 305-343 (KR).

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **LEE, Jung-Ho**
[KR/KR]; 117-402 Hanbit apt., Eoeun-dong, Yuseong-gu,
Daejeon-city 305-333 (KR). **KIM, Hyung-Rok** [KR/KR];
6-207 Town apt., 391 Doryong-dong, Yuseong-gu,
Daejeon-city 305-340 (KR). **HAN, Yo-Han** [KR/KR];
127-1208 Hanbit apt., Eoeun-dong, Yuseong-gu, Dae-
jeon-city 305-333 (KR). **JEONG, Suk-Jong** [KR/KR];
127-1407 Hanbit apt., Eoeun-dong, Yuseong-gu, Dae-
jeon-city 305-333 (KR). **CHOI, Nak-Mo** [KR/KR]; 2
Aekyung Petrochemical Satek, 700-1 Yaeum 3-dong,
Nam-gu, Ulsan-city 680-043 (KR). **WOO, Hang-Soo**
[KR/KR]; 107-603 Samsanhyundai apt., Samsan-dong,
Nam-gu, Ulsan-city 680-767 (KR). **KIM, In-Ki** [KR/KR];

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
4 December 2003

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: HYDROGENATION CATALYST, PREPARATION THEREOF, AND METHOD FOR THE PREPARATION OF
GAMMA-BUTYROLACTONE FROM MALEIC ANHYDRIDE USING THE CATALYST

(57) Abstract: The present invention relates to a hydrogenation catalyst represented by the following formula 1, a method for the
preparation thereof, and a method for preparing gamma-butyrolactone using this catalyst. The method for preparing gamma-butyro-
lactone from maleic anhydride using the catalyst of the invention prepared by stabilizing the precursor particles of copper oxide, zinc
oxide, and manganese oxide with a silica exhibits high selectivity, high yield, and high productivity under the operation conditions
of a low molar ratio of hydrogen with regard to the reactants, and enables the preparation of gamma-butyrolactone from maleic an-
hydride with long-term stability without requiring frequent re-activation of the catalyst: Formula (I) $\text{CuO(a)ZnO(b)MnO}_2\text{(c)SiO}_2\text{(d)}$
wherein a, b, c, and d are represented on the basis of weight, wherein a is 20 to 90, b is 0.01 to 10, c is 0.01 to 5, and d is 5 to 50.

WO 03/089125 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 03/00800-0

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: B01J 23/84, B01J37/10, C01D 307/32,

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: B01J, C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AT-B

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC; WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0591795 A1 (BASF Aktiengesellschaft) 13 April 1994 (13.04.94) <i>the whole document, esp table 1, Cat.D, F, H, claims.</i>	1-15
A ,	EP 0528305 A2 (Hoechst Aktiengesellschaft) 24 February 1993 (24.02.93) <i>examples, claims.</i>	1-15
A	EP 0559053 A2 (Hoechst Aktiengesellschaft) 8 September 1993 (08.09.93) <i>claims.</i>	1-15

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Date of the actual completion of the international search

11 September 2003 (11.09.2003)

Date of mailing of the international search report

25 September 2003 (25.09.2003)

Name and mailing address of the ISA/AT

Austrian Patent Office

Dresdner Straße 87, A-1200 Vienna

Facsimile No. 1/53424/535

Authorized officer

TEGLER E.

Telephone No. 1/53424/213

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 03/00800-0

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